

REMARKS

If the Examiner believes that there are any unresolved issues in any of the claims now pending in the application, the Examiner is urged to telephone Aubrey Helms, Jr., Ph.D. at (408) 504-8199 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Reference to paragraph numbers or line numbers for the present invention will be based on the US PTO Published Application 2006/0003077 A1 published on January 5, 2006.

Rejections under 35 U.S.C. § 103

Claims 1, 2, 5, and 7-9 are presently in the application.

Claims 1, 2, 5, and 7-8 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Oles (US 4,145,451) in view of Qiang *The production of Starch modified by alkenyl succinic anhydrides and its use in food industry* (2000), Cain (US 5,756,143), and Hamm (US 2003/0203096).

Claims 3-4, 6 and 10 have been previously canceled; claim 1 is currently amended; and claims 2, 5, 7-9 remain as previously presented.

Claim 1 has been amended to add the element that specifies that the present invention describes a semi-solid acid emulsified mayonnaise-like food that does not contain protein. Support for this element may be found in paragraph

[0034] of the published application. This is further supported in the "Examples" section where Example 1 and Example 2 describe a semi-solid acid emulsified mayonnaise-like food that does not contain protein. The detailed compositions of Example 1 and Example 2 are listed in Tables 1 and 2 respectively. The results of the stability of Examples 1 and 2 with respect to viscosity, shape holding ability, flavor, and oral solubility are illustrated in Tables 8-12.

Examples 1 and 2 (E-1, E-2) may be compared to Comparative Examples 1-4 (see Tables 3-6). The Applicants formulations of E-1 and E-2 each contain no protein. Comparative Example 1 (CE-1) contains egg protein (16.7% content by mass which calculates to 2.48% by mass in the final product - see [0071]). The method of calculating the final concentration of protein in the final product is outlined in paragraphs [0034] - [0037]. Example 2 (CE-2) contains no egg, but contains protein in the form of soy protein. The soy protein is added at a level of 2.2% content by mass which calculates to 1.47% by mass in the final product - see [0073]). Comparative Example 3 (CE-3) contains egg protein (5.0% content by mass which calculates to 0.74% by mass in the final product - see [0075]). Example 4 (CE-4) contains no egg, but contains protein in the form of soy protein. The soy protein is added at a level of 0.8% content by mass which calculates to 0.54% by mass in the final product - see [0077]).

CE-1 and CE-2 do not contain esterified starch with octenylsuccinic acid as described in claim 1 and will not be discussed further except to mention that they show

poor performance in the attributes of viscosity, shape holding ability, flavor, and oral solubility with respect to long term storage (i.e., ~7 weeks).

CE-3 and CE-4 are the best comparative examples to compare with the Applicants formulations of E-1 and E-2. One difference lies in that CE-3 and CE-4 contain 1.0% esterified starch with octenylsuccinic acid which is 0.2% below the lower limit described in claim 1. Also, as noted above, CE-3 comprises a final protein concentration of 0.74% by mass in the form of egg protein and CE-4 comprises a final protein concentration of 0.54% by mass in the form of soy protein. Each of these levels is above the limit described in newly amended claim 1.

Comparing the results in Tables 8-12, it can be shown that Comparative Examples 1-4 are inferior to Examples 1 and 2 with respect to viscosity, shape holding ability, flavor, and oral solubility.

The results summarized in Table 9 indicate that the Applicants formulations (E-1, E-2) do not show evidence of separation of the components after storage and repeated refrigeration-thaw cycles (see [0087]). In contrast, both CE-3 and CE-4 (which do not meet the limitations as described in claim 1) each exhibit evidence of the separation of the oil phase (CE-3, CE-4) and evidence of the separation of the water phase (CE-4) after storage and repeated refrigeration-thaw cycles (see [0087]).

The results summarized in Table 10 indicate that the Applicants formulations (E-1, E-2) do not show evidence

of degradation of shape retaining ability and oral solubility. In each case, the samples were rated as "G" (see [0053] - [0060] for evaluation conditions). In contrast, CE-3 only rated a score of "M" for shape retaining ability and "P" for oral solubility (see [0053] - [0060] for evaluation conditions). CE-4 rated a score of "M" for both shape retaining ability and oral solubility (see [0053] - [0060] for evaluation conditions).

Table 11 indicates that the Applicants formulations (E-1, E-2) retained their smooth appearance as either "E" or "G" (see [0061] - [0064] for evaluation conditions) over a storage period of 7 months.

Table 12 indicates that the Applicants formulations (E-1, E-2) actually increased in viscosity after a storage period of 7 weeks. In contrast, both CE-3 and CE-4 showed a decrease in viscosity, indicating a lack of stability for the formulations.

Semi-solid dressings have disadvantages including the characteristic that the viscosity tends to decrease with time during storage. This is evident from the results shown in Table 12 for the comparative examples. Additionally, the decrease in the viscosity with the elapse of time has a possibility of causing deterioration in flavor. Previous attempts to address these issues did not produce satisfactory results with respect to viscosity stability, flavor stability, and shape stability (see [0004]). The results highlighted above demonstrate that the present invention has successfully addressed the issues of the

viscosity decrease and deterioration of flavor in semi-solid dressings.

The Oles patent (4,145,451) describes a number of different formulations of food products. The closest formulation to the present invention is the "typical high oil-containing dressing" as illustrated in the Table at 3:10-20. The table lists various ranges and lists a specific example. Although the range in the table includes a protein value of 0%, the specific example lists an egg yolk (i.e., protein) content of 4.0 weight percent. Oles continues to evaluate 68 different dressing formulations. In each case, the formulations contained 5.0 percent egg yolk solids (see 5:12-14). Oles does not discuss the benefits or detriments of including or not including egg proteins in the formulation and their effect on the stability of the factors discussed above. Oles does not disclose that degradation in flavor and a reduction in viscosity with the passage of time of an acidic mayonnaise-like food can be suppressed in a food that substantially does not contain protein. Additionally, Oles mentions the emulsification of the starch component only in passing (see 2:37-51). Oles does not mention the esterification of the starch. The primary focus of the Oles patent is the preservation of food product formulations by the addition of phosphoric acid and acetic acid. The goal is to prevent the growth of yeasts and molds. The Applicants believe that the Oles patent does not contain sufficient information to disclose the present invention.

The Examiner has used the Qiang document to supplement the Oles patent. The Qiang document describes

the esterification of the starch with octenylsuccinic acid. Qiang states that the esterification of the starch is not an emulsifying agent (see section 3.1 - pages 6-7). Additionally, the Qiang document does not discuss the other important aspects of the presently claimed invention such as the presence or absence of egg protein.

The Examiner has used the Cain patent (5,756,143) to address the thickening polysaccharide element of the present invention. The Examiner has cited the section found at 9:1-24 as relevant to the present invention. This section of the Cain patent describes a salad dressing food product. The formulation as listed in Cain-Example-VI (9:1-13) contains 0.8 weight percent of dried egg yolk. Cain does not discuss the benefits or detriments of including or not including egg proteins in the formulation and their effect on the stability of the factors discussed above.

The Examiner has used the Hamm published application (2003/0203096) to address the waxy cornstarch element of the presently claimed invention. Each of the formulations described in Hamm contain egg protein (see [0024]) as an essential ingredient. Hamm uses 4 primary examples (see tables 5-8). Each of these base formulations contains egg protein. Examples 5-19 are derivations of these 4 primary formulations made by adding additional ingredients. Hamm does not discuss the benefits or detriments of including or not including egg proteins in the formulation and their effect on the stability of the factors discussed above. Hamm does not disclose that degradation in flavor and a reduction in viscosity with the passage of time

of an acidic mayonnaise-like food can be suppressed in a food that substantially does not contain protein.

The Applicants submit that none of the cited references disclose individually, or in combination, the beneficial effect of the elements and their ranges described in currently amended claim 1. The previous discussion wherein the Applicants formulations as described in E-1 and E-2 were compared to CE-3 and CE-4 demonstrates the importance of the elements and their ranges described in currently amended claim 1. Both CE-3 and CE-4 exhibited poor stability with respect to the attributes of viscosity, shape holding ability, flavor, and oral solubility with respect to long term storage (i.e., ~7 weeks) while being very similar in content to the Applicants formulations. Applicants submit that it would not have been obvious to a PHOSITA to prepare a food product formulation with the benefits of the presently claimed invention without undue experimentation. Further evidence of this may be found in the cited prior art wherein no food products have been disclosed with the benefits of the presently claimed invention, even with the large number of examples being used in the various references. Therefore, the Applicants respectfully submit that claim 1 is now considered to be in condition for allowance and action to that effect is most earnestly solicited.

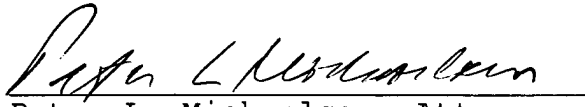
Pursuant to MPEP 2143.03, claims 2, 5, and 7-9 are dependent from amended claim 1 and therefore are also patentable.

Appl. No. 10/534,950
Amdt. dated Jan. 25, 2010
Reply to Office Action of Oct. 29, 2009

The claims, as they now stand, are considered to be in condition for allowance and action to that effect is most earnestly solicited.

Respectfully submitted,

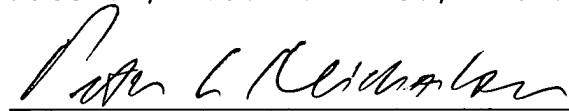
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